OFFICE OF FOSSIL ENERGY

	FY 1995
Office of Fossil Energy - Grand Total	$7,668,000
Office of Advanced Research	$7,668,000
Fossil Energy AR&TD Materials Program	$7,668,000
Materials Preparation, Synthesis, Deposition, Growth or Forming	$3,293,000
Coating Process Development for Cr-Nb Alloys	90,000
Procurement of Advanced Austenitic and Aluminide Alloys	50,000
Development of Iron Aluminides	170,000
Ultrahigh Temperature Intermetallic Alloys	200,000
Microalloyed Iron Aluminides	78,000
Low-Aluminum Content Iron-Aluminum Alloys	75,000
Mo-Si Alloy Development	10,000
Technology Transfer - Iron Aluminides	60,000
Commercial-Scale Melting and Processing of Low-Aluminum Content Alloys	50,000
Development of a Modified 310 Stainless Steel	120,000
Technology Transfer - Advanced Austenitics	80,000
Influence of Processing on Microstructure and Properties of Aluminides	175,000
Investigation of Electrospark Deposited Coatings for Protection of Materials in Sulfidizing Atmospheres	75,000
Technology Transfer - Electrospark-Deposited Coatings for Protection of Materials in Sulfidizing Atmospheres	80,000
Engineering-Scale Development of the Vapor-Liquid-Solid (VLS) Process for the Production of Silicon Carbide Fibrils	PYF*
Ceramic Composite Processing Equipment	30,000
Fabrication of Fiber-Reinforced Composites by Chemical Vapor Infiltration and Deposition	150,000
Compliant Oxide Coating Development	75,000
Development of Oxidation/Corrosion-Resistant Composite Materials and Interfaces	127,000
Optimization of the Chemical Vapor Infiltration Technique for Ceramic Composites	85,000
Transport Properties of Ceramic Composites	148,000
Modeling of Fibrous Preforms for CVD Infiltration	50,000
Corrosion Protection of SiC-Based Ceramics with CVD Mullite Coatings	50,000
Feasibility of Synthesizing Oxide Films on Ceramic and Metal Substrates	100,000
Screening Analysis of Ceramic Hot-Gas Filter Materials	PYF
Environmental Effects on Ceramics	100,000
Ceramic Coating Evaluation	100,000
Metal Dusting Study	25,000
Low-Temperature Fabrication of Transparent Silicon Nitride	100,000
Microwave-Assisted Chemical Vapor Infiltration	25,000
Development of Microwave-Heated Diesel Particulate Filters	75,000

*PYF denotes that funding for this activity, active in FY 1995, was provided from prior year funds.

OFFICE OF FOSSIL ENERGY (Continued)

	FY 1995
Office of Advanced Research (continued)	
Fossil Energy AR&TD Materials Program (continued)	
Materials Preparation, Synthesis, Deposition, Growth or Forming (continued)	
Carbon Fiber Composite Molecular Sieves	275,000
Carbon Materials Equipment	15,000
Activation of Carbon Fiber Composite Molecular Sieves	75,000
Characterization of Coal and Coal Extracts	20,000
Production of Aluminum Reduction Electrodes from Solvent-Extracted Coal-Derived Carbon Feedstocks	PYF*
Exploration of Coal-Based Pitch Precursors for Ultra-High Thermal Conductivity Graphite Fibers	PYF*
Development of Carbon-Carbon Composites from Solvent-Extracted Pitch	PYF*
Conversion of Pitches and Cokes from Solvent-Extracted Materials	PYF*
Carbon Fiber Composite Molecular Sieves	155,000
Development of Precursors for Production of Graphites and Carbon Products	PYF*
Production of Yarn From VLS Whiskers	100,000
Radio-Wave Nano-Phase Silicon Nitride and Silicon Carbide Processes	100,000
Materials Properties, Behavior, Characterization or Testing	$2,117,000
Investigation of the Weldability of Polycrystalline Iron Aluminides	75,000
Aqueous Corrosion of Iron Aluminides	29,000
Evaluation of the Intrinsic and Extrinsic Fracture Behavior of Iron Aluminides	68,000
Investigation of Iron Aluminide Weld Overlays	56,000
Fireside Corrosion Tests of Candidate Advanced Austenitic Alloys, Coatings, and Claddings	80,000
Joining Techniques for Advanced Austenitic Alloys	50,000
Fatigue and Fracture Behavior of Cr-Nb Alloys	20,000
Corrosion and Mechanical Properties of Alloys in FBC and Mixed-Gas Environments	310,000
Mechanically Reliable Coatings and Scales for High-Temperature Corrosion Resistance	50,000
Environmental Effects on Iron Aluminides	145,000
Investigation of Moisture-Induced Embrittlement of Iron Aluminides	73,000
Corrosion Protection of Ultrahigh Temperature Intermetallic Alloys	146,000
Oxide Dispersion Strengthened (ODS) Iron Aluminide Equipment	35,000
Oxide Dispersion Strengthened (ODS) Iron Aluminides	222,000
Materials Support for HITAF	PYF*
Characterization of Low-Expansion Ceramic Materials and Development of Sol Gel-derived Coatings as Interfaces for SiC Composites	23,000

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OFFICE OF FOSSIL ENERGY (Continued)

	FY 1995
Office of Advanced Research (continued)	
Fossil Energy AR&TD Materials Program (continued)	
Materials Properties, Behavior, Characterization or Testing (continued)	
Joining of Ceramics	50,000
Support Services for Ceramic Fiber-Ceramic Matrix Composites	25,000
Development of Nondestructive Evaluation Methods and Effects of Flaws on the Fracture Behavior of Structural Ceramics	310,000
Fracture Behavior of Advanced Ceramic Hot-Gas Filters	125,000
Ceramic Catalyst Materials	225,000
Device or Component Fabrication, Behavior or Testing	$1,819,000
Materials and Components in Fossil Energy Applications Newsletter	60,000
Ceramic Fiber Filter Technology	50,000
Fabrication of Full-Scale Fiber-Reinforced Hot-Gas Filters by Chemical Vapor Deposition	PYF*
Development of Ceramic Membranes for Gas Separation	400,000
Corrosion Protection of Ceramic Heat Exchanger Tubes	125,000
Investigation of the Mechanical Properties and Performance of Ceramic Composite Components	150,000
Stability of Solid Oxide Fuel Cell Materials	250,000
Mixed Oxygen Ion/Electron-Conducting Ceramics for Oxygen Separation and Fuel Cells	225,000
Proton-Conducting Cerate Ceramics	225,000
ODS Fe_3Al Tubes for High-Temperature Heat Exchangers	53,000
Porous Iron Aluminide Alloys	23,000
Iron Aluminide Filters	50,000
Evaluation of Ceramic Heat Exchanger Tubes and Joints	158,000
Thermal and Mechanical Analysis of a Ceramic Tubesheet	40,000
Ceramic Tubesheet Design Analysis	10,000
Instrumentation and Facilities	$ 439,000
Management of the Fossil Energy AR&TD Materials Program	400,000
General Technology Transfer Activities	35,000
Gordon Research Conference Support	4,000

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